

Citrobacter rodentium NleA DNA Sequence

ATGAACATTCAACCGAACATACATTCCGGAATCACCACACAGAATAATCAACAACATCATCACGCAGAA  
CAAGTGCCTGTCTCTAGCTCAATACCGCGATCAGATTTACCTCCAAATTGCGAAGCTGGATTTGTTGTG  
CATATTCCAGAGGATATACAGCAACATGTACCGGAATGTGGTGAAACAACGGCTCTATTAAGCTTGATA  
AAAGATGAAGGCCTGCTCTCAGGACTAGATAAATATCTTGCTCCTCACCTTGAAGAAGGCTCCCTTG  
AAAAAAGCATTGGATACGTTTGGTTTATTCAATGTTACTCAAATGGCATTAGAGATACCCAGTTCCGTT  
CCAGGCATATCTGGTAAATATGGTGTTTCAGATGAACATTGTAAAACCAGACATACATCCAACAACCGGG  
AACTATTTTTTACAGCTATTTCTCTGCATGACGAAATAGGTTTTAACTTCAAAGATCTTCCTGGCCCA  
TTAAAAAATGCATTAACCAACAGCAGTATATCGGCTACTGCATCGACTGTAGCCCCACACCAAACGAC  
CCAATGCCATGGTTTGGATTAACTGCTCAAGTGGTTCGTAATCATGGTGTAAGAACTTCCTATAGTCAA  
ACCGAAAATGGATGGAAGCTTGTAGGGGAAACACCTCTTACTCCAGATGGCCCCAAAGCCAATTATACG  
GAAGAATGGGTTATCAGGCCGGGAGAAGCAGATTTTAAATATGGAACATCGCCATTACAGGCAACTCTT  
GGACTGGAGTTTGGTGCGCATTTTAAAGTGGGATTTAGATAATCCTAATACCAAATATGCCATCCTTACC  
AATGCTGCCGCAAATGCTATTGGTGCTGCTGGAGGGTTTGCGGTATCCAAAGTCCCCGGCATAGATCCA  
ATGCTGTCCCCTCATGTGCGTGCAATGCTTGGGCAAGCAGCGGGGCATGCCGTACAATGTAATACCCCC  
GGATTAAAGCCAGACACTATTTTATGGTGGGCAAGCGCGACATTTGGAGCTGCTGATTTAAATAAAGCC  
GAATTTGATAAAGTGCGGTTCCTGACTACCCTCGTATATGGTTCATGCACGGGAAGGAGCTTTATTC  
CCAAATAAGCAAGACATTGCCCGTGTAACAGGCGCAGACATAAAAGCTATGGAAGAAGGCGTACCCGTT  
GGACATCAACATCCAAAACCGGAGGATGTGGTCATCGATATCGAAGGTGGCAATTCACCACATCATAAT  
CCATCAAATTATGTTGACACCTTTGAAATAATCCAAGAAACAAGGGTCTAA (SEQ ID NO:1)

**FIG. 1A**Citrobacter rodentium NleA Protein Sequence

MNIQPNIHSGITTONNQHHHAEQVPVSSSIPRSDLPPNCEAGFVVHIPEDIQQHVPECGETTALLSLI  
KDEGLLSGLDKYLAPHLEESLGGKALDTFGLFNVQMALEIPSSVPGISGKYGVQMNIVKPDHPTTG  
NYFLQLFPLHDEIGFNFKDLPGPLKNALTNSSISATASTVAPTNDPMPWFGLTAQVVRNHGVELPIVK  
TENGWKLVGETPLTPDGPKANYTEEWVIRPGEADFKYGTSPQLQATLGLEFGAHFKWDLNPNNTKYAILT  
NAAANAIGAAGGFAVSKVPGIDPMLS PHVGAMLGQAAGHAVQCNTPGLKPDITLWWAGATFGAADLNKA  
EFDKVRFTDYPRIWFHAREGALFPNKQDIARVTGADIKAMEEGVPVGHQHPKPEDVVIDIEGGNSPHHN  
PSNYVDTFEIIQETRV (SEQ ID NO:22)

**FIG. 1B**

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Enteropathogenic *E. coli* NleA DNA Sequence

atgaacattcaaccgatcgtaacatccggaatcaccacacaaaacaatcgacatcatcacgcagaacaa  
acgtcccctacacaaataccgcaatccgaattacctaattggatgcgaaacgggatttggtgttcataatc  
ccagaggatatgcagcgacatgcaccggaatgcggtgaaacaacagctctactgagcttgataaaagat  
gaaggtctgctctctgggctggataaatactctgcacctcatcttgaagaaggctctgcaggaaaaaaa  
gcattggatatgtttggtttattcaatgtctctcagatggcattagaaataccagcaccgttccgggt  
atctctggtaaatatggtgtccagctaaacattgtaaaaccagatattcatcctacatcaggtattat  
tttttacagatattccctttgcatgatgaaataggtattaatttttaaagaccttcctggtccattaaaa  
aatgcattaagcaacagcaatataccaaccactgtatcgactgctgcatccactattgcatcagccact  
acttcgacggtaaccaccgctcaaaagacccaataccatgggttggttgattaacagctcaagtagttcgt  
aatcatggtgtggaacttcctatagtcaaaaactgaaaatggatggaagcttggtggagaaactcctctt  
actcctgatggcccaagcaaattatactgaagagtgggtgatcagaccgggagaagcagatttttaa  
tatggtgcatctccactacaggcaactctagggctggagtttggcgcacatttcaagtgggatttagat  
aacctaataactaaatatgccgttcttaccatgctgccgcaaatacgcttggtgctgtagggggattt  
gcagtatccagatttactggtacagatccaatgttaagtcctcatatcggtgcaatgggtgggcaagca  
gccccgcatgccatacagtataatacccccggttaaagccagacactattttatggtgggcaggtact  
actcttggactggctgatttaaacaggccgagtttgagaggccagattcactgactatcctcgtata  
tggtggcatgcaagagaaggtgccattttcccaaataaagcagatattgaacatgccacaggggctgat  
atacgcgcaatggaagaaggtgtatctgttggaacggcatccaaatccagaggatgtggtcatcaat  
atcgaaagcaataactcaccacatcataacccatcaaattatgttgataccggtgatataatccaagaa  
acaagagtctaa (SEQ ID NO:2)

FIG. 1C

Enteropathogenic *E. coli* NleA Protein Sequence

MNIQPIVTSGITTONNRHHAEQTSPTQIPQSELPNGCETGFVVHIPEDMQRHAPECGETTALLSLIKD  
EGLLSGLDKYLAPHLEEGSAGKKALDMFGLFNVSQMALEIPSTVPGISGKYGVQLNIVKPDHPTSGNY  
FLQIFPLHDEIGINFKDLPGPLKNALSNSNIPTTVSTAASIASATTSTVTTASKDPIPWFGTLTAQVVR  
NHGVELPIVKTENGWKLVGETPLTPDGPKANYTEEWVIRPGEADFKYGASPLQATLGLEFGAHFKWDL  
NPNTKYAVLTNAAANALGAVGGFAVSRFTGDPMLSPHIGAMVQAAGHAIQYNTPLKPDITLWWAGT  
TLGLADLNKAEFGEARFTDYPRIWWHAREGAI FPNKADIEHATGADIRAMEEGVSVGQRHPNPEDVVIN  
IESNNSPHHNPSNYVDTVDIQETRV (SEQ ID NO:23)

FIG. 1D

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Enterohemorrhagic *E. coli* NleA DNA Sequence

ATGAACATTCAACCGACCATAACAATCTGGAATCACCTCACAAAACAATCAACATCATCAAACAGAACAA  
ATACCCTCTACACAAATACCGCAATCCGAATTACCTCTAGGATGCCAAGCTGGATTTGTTGTTAATATT  
CCAGATGATATACAGCAACATGCACCGGAATGCGGTGAAACAACAGCTCTACTGAGCTTGATAAAAGAT  
AAAGGTCTGCTCTCAGGGCTAGACGAATATATAGCTCCTCACCTTGAAGAAGGATCCATAGGAAAAAAA  
ACATTGGATATGTTTGGTTTATTCAATGTTACCCAAATGGCATTAGAGATACCTAGTTCCGTTTCAGGC  
ATCTCTGGTAAATATGGTGTCCAGCTAAACATTGTAAAACAGATATTCATCCTACATCAGGTAATTAT  
TTTTTACAGATATTCCCTCTGCATGATGAAATAGGTTTAAATTTTAAAGACCTTCCTGGCCCGTTAAAA  
AATGCATTAAGCAACAGTAATATATCAACCACTGCAGTGTCGACTATTGCATCGACTGGAACATCAGCC  
ACTACTTCGACGGTAACCAACCGAGCCAAAAGACCCAATACCATGGTTTGGATTAACAGCTCAAGTGGTT  
CGTAATCATGGTGTAGAACTTCCTATAGTCAAACTGAAAATGGATGGAAGCTTGTTGGAGAAACACCA  
CTTACTCCTGATGGGCCGAAAGCAAATTACACGGAGGAGTGGGTATCAGACCGGGAGAAGCAGATTTT  
AAATATGGTGCATCTCCATTACAGGCAACTCTAGGGCTGGAGTTTGGCGCACATTTCAAGTGGGATTTA  
GATAACCCCTAATACTAAATATGCCGTTCTTACCAATGCTGCCGCAAATGCGCTTGGTGCTTTAGGGGGA  
TTTGCAGTATCCAGATTGCTAGTACAGATCCAATGTTAAGTCCTCATATCGGTGCAATGGTTGGGCAA  
GCAGCAGGGCATGCCATACAGTATAATACCCCTGGATTAAAGCCAGACACTATTTTATGGTGGGCTGGT  
GCGACACTGGGGGCTGCCGATTTAAACAAGGCCGAGTTTGAAGTAGCTAGATTCAGTACTGACTATCCTCGT  
ATATGGTGGCACGCAAGAGAAGGAGCTATTTTCCCAATAAAGCAGATATTGAACATGCCACAGGTGCT  
GATATACGCGCAATGGAAGAAGGTATCCCTGTTGGACAGCGGCATCCAAATCCAGAGGATGTGGTAATC  
GATATCGAAAGCAATGGCTTACCACATCATAATCCATCAAATCATGTTGATATCTTTGATATAATCCAA  
GAAACAAGAGTCTAA (SEQ ID NO:3)

**FIG. 1E**Enterohemorrhagic *E. coli* NleA Protein Sequence

mnigptiqsgitsqnnqhhteqipstqipqselpglgcqagfvvniipddiqqhapedcgetallslid  
kgllsgldeyiaphleegsigkktldmfglfnvtqmaleipssvsgisgkygvqlnivkpdihptsgny  
flqifplhdeigfnfkdlpgplknalsnsnisttavstiasstgtsattstvttepkdpipwfgltavv  
rnhgvelpivktengwklvgetpltpdgpkanyteewvirpgeadfkylgasplqatlglefghfkwdl  
dnpntkyavltnaaanalgalggfavsrfastdpmlsphigamvgqaaghaiqyntpglkpdtillwag  
atlgaadlnkaefevartdydpriwwharegaifpnkadiehatgadirameegipvgqrhpnpedvvi  
diesnglphhnpshvdifdiiqetr (SEQ ID NO:24)

**FIG. 1F**

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Citrobacter rodentium NleB DNA Sequences

tattcttttttcagtggtttgaagcAAGGCCAGAGCGATACGGAAAAGGTGAAGTACCGATATTGAATAC  
CAAAGAGCATCCGTATTTGAGCAATATTATAAATGCTGCAAAAATAGAAAATGAGCGcgTAATaGGAGT  
ACTGGTAGACGGAGACTTTACTTATGAGCAAAGAAAAGAATTTCTCAGTCTTGAAGATGAACATCAAAA  
TATAAAGATAATATATCGGGAAAATGTTGATTTTCAGTATGTATGATAAAAACTGTCTGATATTTATCT  
TGAAAATATTCATGAACAAGAATCATATCCAGCGAGTGAGAGAGATAATTATCTGTTaGGcTTaTTAAG  
AGAAGAGTTAAAAAATATTCCATACGGAAAGGACTCTTTGATTGAATCATATGCAGAAAAAAGAGGTCA  
TACTTGGTTTGATTTTTTTTAGAACTTGCGGTATTGAAGGGGGGGGGTGTGTTTACAGAGACGGGTAA  
AACTGGATGCCATAACATATCTCCATGTGGGGGATGTATATATCTTGATGCAGATATGATTATTACTGA  
TAAATTAGGTGTCCTGTATGCTCCTGATGGTATcgctgtgcatgtagattgtaatgatgaga (SEQ  
ID NO:4)

**FIG. 2A**

AAGGCCAGAGCGATACGGAAAAGGTGAAGTACCGATATTGAATACCAAAGAGCATCCGTATTTGAGCAA  
TATTATAAATGCTGCAAAAATAGAAAATGAGCGTAATGGAGTACTGGTAGACGGAGACTTTACTTATGA  
GCAAAGAAAAGAATTTCTCAGTCTTGAAGATGAACATCAAAATATAAAGATAATATATCGGGAAAATGT  
TGATTTTCAGTATGTATGATAAAAACTGTCTGATATTTATCTTGAAAATATTCATGAACAAGAATCATA  
TCCAGCGAGTGAGAGAGATAATTATCTGTTGGTTTTAAGAGAAGAGTTAAAAAATATTCCATACGGAAA  
GGACTCTTTGATTGAATCATATGCAGAAAAAAGAGGTCATACTTGGTTTGATTTTTTTAGAACTTGGC  
GGTATTGAAGGGGGGGGGTGTGTTTACAGAGACGGGTAAACTGGATGCCATAACATATCTCCATGTGG  
GGGATGTATATATCTTGATGCAGATATGATTATTACTGATAAATTAGGTGTCCTGTATGCTCCTGATGG  
TAT (SEQ ID NO:5)

**FIG. 2B**Citrobacter rodentium NleB Protein Sequences

ILFQWFEARPERYGKGEVPILNTKEHPYLSNIINAAKIENERVIGVLVDGDFTYEQRKEFLSLEDEHQN  
IKIIYRENVDFSMYDKKLSDIYLENIHEQESYPASERDNYLLGLLREELKNIPYGKDSLIESYAEKRGH  
TWFDFFRNLAVLKGGGLFTETGKTGCHNISPCGGCIYLDADMIITDKLGVLVYAPDGIAPHVDCNDE  
(SEQ ID NO:25)

**FIG. 2C**

RPERYGKGEVPILNTKEHPYLSNIINAAKIENERVIGVLVDGDFTYEQRKEFLSLEDEHQNIKIIYREN  
VDFSMYDKKLSDIYLENIHEQESYPASERDNYLLGLLREELKNIPYGKDSLIESYAEKRGH  
LAVLKGGGLFTETGKTGCHNISPCGGCIYLDADMIITDKLGVLVYAPDG (SEQ ID NO:26)

**FIG. 2D**

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Enteropathogenic *E. coli* NleB DNA Sequence

atgttatcttcattaaatgtccttcaatccagcttcagaggaaagacagctttatcaaatagtacactt  
 ctccagaaagtttcttttgctggaaaagaatattctctggaacctattgatgaaagaacccctattctt  
 ttccagtgggttgagcaatattataaatgctgcaaaaaatagaaaatgagcgtataatcgggtgtgctggta  
 gatggaaattttacttatgaacaaaaaaaggaatttctcaatcttgaaaatgaacatcaaaatataaaa  
 ataactctaccgagcagatgtggatttcagcatgtatgataaaaaactatctgatattttaccttgaaaat  
 atccataaacaagaatcataccctgccagtgcaggggataattatctgttaggcttattaagagaagag  
 ttaaaaaatatcccagaaggttaaggactctttgattgagtcatatgcagaaaaagagaaacatacttgg  
 tttgattttttcaggaatttggccatattgaaggctggaagtttgtttacagagacgggaaaaaactgga  
 tgccataacatatcgccctgtagcggatgtatatacttgcgacatgattattaccgataaatta  
 ggagtcctgtatgctcctgatggatcgctgtgcatgtagattgtaatgatgagataaaaagtcttgaa  
 aatggtgcatagttgtcaatcgtagtaatcatccagcattacttgcaggcctcgatattatgaagagt  
 aaagttgacgctcatccatattatgatggtctaggaaagggatcaagcggcatttttaactattcatcg  
 ttacacaattataatgctttttgtgattttattgaatttaagcatgaaaatattataccgaataccagt  
 atgtataccagcagttcatggttaa (SEQ ID NO:6)

**FIG. 2E**Enteropathogenic *E. coli* NleB Protein Sequence

MLSSLNVLQSSFRGKTALSNSTLLQKVSFAGKEYSLEPIDERTPILFQWFEARPERYKGEVPILNTKE  
 HPYLSNIINAAKIENERIIGVLVDGNFTYEQKKEFLNLENEHQNIKIIYRADVDFSMYDKKLSDIYLEN  
 IHKQESYPASERDNYLLGLLREELKNIPEGKDSLIESYAEKREHTWFDFFRNLAAILKAGSLFTETGKTG  
 CHNISPCSGCIYLDADMIITDKLGVLYAPDGIAPHVDCNDEIKSLENGAIVVNRSNHPALLAGLDIMKS  
 KVDAHPPYDGLGKGIKRHFNYSSLHNYNAFCDFIEFKHENIIPNTSMYTSSSW (SEQ ID NO:27)

**FIG. 2F**Enterohemorrhagic *E. coli* NleB DNA Sequence

ATGTTATCTTCATTAAATGTCCTTCAATCCAGCTTCAGAGGAAAGACAGCTTTATCAAATAGTACACTT  
 CTCCAGAAAGTTTCTTTTGCTGGAAAAGAATATCCTCTGGAACCTATTGATGAAAAAACCCCTATTCTT  
 TTTCAGTGGTTTGAAGCAAGGCCAGAGCGATACGAAAAAGGAGAAGTACCAATATTGAATACCAAAGAA  
 CATCCGTATTTGAGCAATATTATAAATGCTGCAAAAATAGAAAATGAGCGTATAATCGGTGTGCTGGTA  
 GATGGAAATTTTACTTATGAACAAAAAAGGAATTTCTCAGTCTTGAAAATGAATATCAAAATATAAAA  
 ATAATCTACCGAGCAGATGTGGATTTTCAGCATGTATGATAAAAACTATCTGATATTTACCTTGAAAAT  
 ATCCATAAACAAGAATCATACCCTGCCAGTGAGAGGGATAATTATCTGTTAGGCTTATTAAGAGAAGAG  
 TAAAAAATATCCAGAAGGTAAGGACTCTTTGATTGAGTCATATGCAGAAAAAAGAGAACATACTTGG  
 TTTGATTTTTTTCAGGAATTTGGCCATGTTGAAGGCTGGAAGTTTGTGTTACAGAGACGGGAAAAAAGTGA  
 TGCCATAACATATCGCCCTGTAGCGGATGTATATATCTTGATGCCGACATGATTATTACCGATAAATTA  
 GGAGTCTGTATGCTCCTGATGGTATCGCTGTGCATGTAGATTGTAATGATGAGATAAAAAGTCTTGAA  
 AATGGTGCGATAGTTGTCAATCGTAGTAATCATCCAGCATTACTTGCAGGCCTCGATATTATGAAGAGT  
 AAAGTTGACGCTCATCCATATTATGATGGTCTAGGAAAGGGTATCAAGCGGCATTTTAATCTATTCATCG  
 TTACACGATTATAATGCTTTTTGTGATTTTATTGAATTTAAGCATGAAAAATATTATACCGAATACCAGT  
 ATGTATACCTGCAGTTCATGGTAA (SEQ ID NO:7)

**FIG. 2G**

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Enterohemorrhagic *E. coli* NleB Protein Sequences

mlssl nvlqssfrgktalsnstllqkvsfagkeyplepidektpilfqwfearperyekgevpilntke  
 hpylsniinaakieneriigvldgnftyeqkkeflsleneyqnikiiyradvdfsmydkklsdiyen  
 ihkqesypaserdnyllgllreelknipegkdsliesyakrehtwdfdfnrlamlkagslftetgktg  
 chnispcsgciyldadmiitdklgvlyapdgiavhvdndeikslengaivvnrsnhpallagldimks  
 kvdahpyydgldgkgikrhfnyslhdyna fcd fiefkheniipntsm ytcsw (SEQ ID NO:28)

**FIG. 2H**

MLSPIRTTFHNSVNIVQSSPCQTVSFAGKEYELKVIDEKTPIILFQWFEPNPERYKKDEVPIVNTKQHPY  
 LDNVTNAARIESDRMIGIFVDGDFS VNQKTAFSKLERDFENVMIYREDVDFS MYDRKLSDIYHDIICE  
 QRLRTEDKRDEYLLNLLLEKELREISKAQDSLISMYAKKRNHAWFDFFRNLALLKAGEIFRCTYNTKNHG  
 ISFGEGCIYLDMDMILTGKLGTIYAPDGISMHVDRNDSVNIENSAIIVNRSNHPALLEGLSFMH SKVD  
 AHPYYDGLGKGVKKYFNFTPLHYNHFCDFIEFNHPNIIMNTSQYTCSSW (SEQ ID NO:29)

**FIG. 2I**Enterohemorrhagic *E. coli* NleB DNA Sequence

atgctttcac	cgataaggac	aactttccat	aactcagtaa	atatagtga	gagttcaccc
tgtcaaacgg	tttcttttgc	aggaaaggaa	tatgagttaa	aggtcattga	tgaaaaaacg
cctattcttt	ttcagtggtt	tgaacctaat	cctgaacgat	ataagaaaga	tgaggttcca
atagttaata	ctaagcagca	tccctattta	gataatgtca	caaatgcggc	aaggatagag
agtgatcgta	tgataggtat	ttttgttgat	ggcgattttt	cagtcaacca	aaagactgct
ttttcaaaat	tggaacgaga	ttttgaaaat	gtaatgataa	tctatcgga	agatgttgac
ttcagtatgt	atgacagaaa	actatcagat	at ttatcatg	atattatatg	tgaacaaagg
ttacgaactg	aagacaaaag	agatgaatac	ttgttgaaatc	tgtagagaa	agagctgagg
gaaatttcaa	aggcgagga	ttctttgatt	tctatgtatg	caaagaaaag	aatcatgca
tggtttgatt	tcttcagaaa	tttagcctta	ttaaaagcag	gagagatatt	caggtgcaca
tataatacaa	agaatcacgg	tatttcattc	ggggaggggt	gtatctatct	tgatattgat
atgatactta	caggtaaagt	tggtacaata	tatgctcctg	atggaatttc	aatgcatgtg
gatcgtcgta	atgatagtgt	aaatattgaa	aatagtgcaa	taattgttaa	ccgtagtaat
catcctgctc	tacttgaggg	actttctttt	atgcatagta	aagtagatgc	tcatccatat
tatgatgggt	tggggaaagg	agttaagaaa	tattttaatt	ttacaccatt	acataattat
aatcattttt	gtgactttat	tgagtttaac	caccttaata	taatcatgaa	cacaagtcag
tatacatgca	gttcatggtg	a	(SEQ ID NO:60)		

**FIG. 2J**

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Citrobacter rodentium NleC DNA Sequence

ATGAAAATTCCCTCACTCCAGCCCAGCTTCAACTTTTTTCGCCCCAGCAGGATACTCTGCTGCCGTTGCT  
CCCAATCGTTTCGGACAATGCCTATGCTGATTACGTATTGGATATAGGCAAGCGAATACCACTTTCCGCG  
GAAGATTTAGGCAACCTATATGAAAATGTCATTTCGCGCCGTTTCGTGACAGCCGTAGCAAGCTCATAGAT  
CAGCATACGGTCGATATGATTGGTAACACTATACTTGATGCTTTGAGCCGATCACAAACCTTTTCGTGAT  
GCCGTAAGCTATGGCATTCATAATAAGGAGGTACACATTGGTTGCATTAAATACAGAAACGAATACGAG  
CTCAACGGAGAATCCCCCGTCAAAGTTGATGATATTCAATCACTAACCTGTACCGAATTATATGAATAC  
GATGTCGGGGCAAGAACCAATTTTACCCATTTGCGAGGCAGGAGAAAACGATAACGAAGAGCCTTATGTC  
AGTTTTAGTGTTGCGCCAGATACTGACTCTTATGAGATGCCATCGTGCGAGGAAGGGCTGATTCACGAG  
ATTATTCATCATGTGACTGGAGCTAGCGATCCGTCTGGAGATAGTAATATAGAGCTAGGACCCACGGAG  
ATTCTCGCACGTCGTGTCGCTCAAGAGCTGGGATGGACTGTCCCGACTTCATAGGATATGCAGAGCCA  
GATCGTGAAGCTCATCTTAGGGGACGTAACCTGAATGCCCTTCGACAGGCGGCCATGCGACATGAAGAT  
AATGAGAGGACTTTCTTCGAAAGGCTGGGTATGATCAGTGATCGATATGAGGCGAGTCCGTGATTTTACA  
GAGTATTCGCTGTGTCTAACATAGAATATGGATTTATCCAGCAACATGATTTTCCCGGGTTGGCTATC  
GACGATAATTTACAGGATGCAAATCAGATCCAACCTCTATCATGGAGCACCTTATATCTTTACATTCGGG  
GATGTGGACAAACACAATCAGCGCTGA (SEQ ID NO:8)

**FIG. 3A**Citrobacter rodentium NleC Protein Sequence

MKIPSLQPSFNFFAPAGYSAAVAPNRSNAYADYVLDIGKRIPLSAEDLGPLYENVIRAVRDSRSKLID  
QHTVDMIGNTILDALSRSQTFRDAVSYGHNKEVHIGCIKYRNEYELNGESPVKVDDIQSLTCTELYEY  
DVGQEPILPICEAGENDNEEPYVSFSVAPDTSYEMPSWQEGLIHEIIHHVTGASDPSGDSNIELGPTE  
ILARRVAQELGWTVPDFIGYAEPDREHLRGRNLNALRQAAMRHEDNERTFFERLGMISDRYEASPDFT  
EYSAVSNIEYGFIQQHDFPLAIDNLDANQIQLYHGAPYIFTFGDVKHNQR (SEQ ID NO:30)

**FIG. 3B**

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Enteropathogenic *E. coli* NleC DNA Sequence

atgaaaattccctcattacagttccaacttcaacttttccgccccggcaggatactctgtcccattgct  
cctaatacgtgctgaaaatgcctatgCGGATTACGTTTTGGATATAGGTAAGCGAATACCACTTTCCGCA  
gcagatttaagcaacgtatacgaagtgtaatacgcgcctccatgacagccgtagcaggcttatcgat  
cagcatacagtcgatatgatcggcaacactgtacttgatgctttgagccgatcacagacatttcgtgat  
gccgtaagctatggcattcataatgagaagggtacacattgggttgattaaatacagaaacgaatacagag  
cttaacgaagaatcttctgtcaaaattgatgatattcaatcactaacctgtaacgaattatatgaatat  
gatgtcgggcaagagccaattttccccatttgcgaagcaggagaaaacgataacgaagagccttatgtc  
agtttttagtggttgcgcagatactgactcttatgagatgccatcgtggcaggaaggactgattcacgag  
attattcatcatgttactggatctagcgatccatctggagatagtaatatagagttaggacccaccgag  
attctcgcacgtcgtgtcgtcaagaactgggatggagtgttcccgacttcaaaggatatgcagagcca  
gaacgtgaagctcatcttaggttacgtaacctgaatgcccttcgacaggctgccatgaggcatgaagag  
aatgagaggggctttcttcgaaaggctgggtacgatcagtgaccgatatgaggcgagtcctgatttcaca  
gagtattccgctgtgtctaacaataggatacggatttatccagcaacatgattttcctggattggctatc  
aacgataatttacaggatgcaaatacagatccaactgtatcatggcgccccttatatttttacatttggg  
gatgtggacaaacacaatcagcgatga (SEQ ID NO:9)

**FIG. 3C**Enteropathogenic *E. coli* NleC Protein Sequence

MKIPSLQSNFNFAPAGYSAPIAPNRAENAYADYVLDIGKRIPLSAADLSNVYESVIRAVHDSRSRLID  
QHTVDMIGNTVLDALSRSTFRDAVSYGIHNEKVHIGCIKYRNEYELNEESSVKIDDIQSLTCNELYEX  
DVGQEPFIPICEAGENDNEEPYVSFSVAPDTSYEMPSWQEGLIHEIIHHVTGSSDSPGDSNIELGPTE  
ILARRVAQELGWSVPDFKGYAEPEREHLRLRLNALRQAAMRHEENERAFFERLGTISDRYEASPDFT  
EYSAVSNIGYGFIQQHDFPLAINDNLQDANQIQLYHGAPYIFTFGDVKHNQR (SEQ ID NO:31)

**FIG. 3D**



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Enterohemorrhagic *E. coli* NleC DNA Sequence

ATGAAAATTCCCTCATTACAGTCCAACCTTCAACTTTTCCGCCCCGGCAGGATACTCTGCTCCCATTGCT  
CCTAATCGTGCTGAAAATGCCTATGCGGATTACGTTTTGGATATAGGTAAGCGAATACCACTTTCCGCA  
GCAGATTTAAGCAACGTATACGAAAGTGTAATACGCGCCGTCCATGACAGCCGTAGCAGGCTTATCGAT  
CAGCATACAGTCGATATGATCGGCAACACTGTACTTGATGCTTTGAGCCGATCACAGACATTTCTGTGAT  
GCCGTAAGCTATGGCATTTCATAATGAGAAGGTACACATTGGTTGCATTAAATACAGAAACGAATACGAG  
CTTAACGAAGAATCTTCTGTCAAATTTGATGATATTCAATCACTAACCTGTAACGAATTATATGAATAT  
GATGTCGGGCAAGAGCCAATTTTCCCCATTTGCGAAGCAGGAGAAAACGATAACGAAGAGCCTTATGTC  
AGTTTTAGTGTTGCGCCAGATACTGACTCTTATGAGATGCCATCGTGGCAGGAAGGACTGATTCACGAG  
ATTATTCATCATGTTACTGGATCTAGCGATCCATCTGGAGATAGTAATATAGAGTTAGGACCCACCGAG  
ATTCTCGCACGTCGTGTCGCTCAAGAACTGGGATGGAGTGTTCCTCGACTTCAAAGGATATGCAGAGCCA  
GAACGTGAAGCTCATCTTAGGCTACGTAACCTGAATGCCCTTCGACAGGCTGCCATGAGGCATGAAGAG  
AATGAGAGGGCTTTCTTCGAAAGGCTGGGTACGATCAGTGACCGATATGAGGCGAGTCCTGATTTTACA  
GAGTATTTCCGCTGTGTCTAACATAGGATACGGATTTATCCAGCAACATGATTTTCTGGATTGGCTATC  
AACGATAATTTACAGGATGCAAATCAGATCCAACCTGTATCATGGCGCCCCTTATATTTTTACATTTGGG  
GATGTGGACAAACACAATCAGCAATGA (SEQ ID NO:10)

**FIG. 3E**Enterohemorrhagic *E. coli* NleC Protein Sequence

mkipslqsnfnfsapagysapiapnraenayadyvldigkriplsaaadlsnvyesviravhdsrsrlid  
qhtvdmigntvldalsrsqtfrdavsygihnekvhigcikyrneyelneessvkiddiqsltcnelyey  
dvgqepifpiceagendneepyvsfsvapdttsyempswqegliheiihhvtgssdpsgdsnielgpte  
ilarrvaqelgwsvpdfkgyaepereahlrlrlnlnalrqaamrheenerafferlgtisdryeaspdf  
eysavsnigygfiiqqhdfpglaindnlqdanqiiqlyhgapyiftfgdvdkhnqq (SEQ ID NO:32)

**FIG. 3F**

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Citrobacter rodentium NleD DNA Sequence

ATGCGCCCTACATCCCTTAACCTGACATTACCTTCGTTACCTCTACCCTCATCTTCAAATTCAATTTCA  
GCCACAGACATTCAATCTCTTGTAAAAATGTCGGGTGTGCGCTGGGTGAAAAACAACCAACAACCTCTGT  
TTCCACGGGACTGACCTTAAAATCTACCAGCATCTTGAAGCTGCCCTCGATAAGATCGAATCCACAGAC  
ACTGGACGTACTCTTTTGAAGTGTATTGAATTAACATCCCGACTCAAATCAGAAAAAAGTGGCAATACAT  
CTCGATTCTGCTGAGTTAGGGGTGATAGCACACTGCAATGCGGATGCTGAAAACTCCCGAGGAAGTGGC  
TCCGACTTTCACTGTAATCTGAATGCAGTTGAATATCCCTGCGGGCAAGGAATTAGCCTGGTAGACTTT  
CATGCATGCATTGTTTTCCATGAACTTCTCCACGTTTTCCACAATTTAAATGGAGAGCGCCTGAAAGTT  
GAGAGTTCTCAACCAGAATTACAAACACACTCCCCACTTTTACTCGAAGAAGCCAGGACTGTTGGGTTG  
GGTGCTTTTTTCTGAAGAAGTTCTTTCAGAAAATAAATTTTCGTGAAGAGATTGGGATGCCCCGCAGAACA  
TTCTACCCGCACGATTCATCTCTATTTCATGATGACAATACAGTGACTCAGAGATTCCAGCGGAAAAAA  
CTGCATCCGTTACTTTAG (SEQ ID NO:11)

**FIG. 4A**Citrobacter rodentium NleD Protein Sequence

MRPTSLNLTLPSPSPSSNSISATDIQSLVKMSGVRWVKNNQQLCFHGTDLKIYQHLEAALDKIESTD  
TGRLLNCIELTSRLKSEKLAIHLDSAELGVIAHCNADAENSRGTGSDFHCNLNAVEYPCGQGISLVDF  
HACIVFHELLHVFNHLNGERLKVESQPELQTHSPLLLEEARTVGLGAFSEEVLSENKFREEIGMPRRT  
FYPHDSSLIHDDNTVTQRFQRKKLHPLL (SEQ ID NO:33)

**FIG. 4B**Enteropathogenic E. coli NleD DNA Sequence

atgcgccctacgtccctcaacttgggtattacatcagtcacacgtcgagctcaatgtcagatacagat  
atcgagtctcttgtaaaagcatcgagcggttcaatggataaaaaataatccgcaacttcggttccagggg  
actgatcataatatatcagcagattgaagcagcactcgataagattgggtctacagagacagggcggt  
gtactcctgaatgctattgaatcaatatcccgacttaaatcagaaacagtggttaatacacctcaactct  
tccagactaggagttatggcacatagagatatagatgctgagaaccatcgggggactgggtccgatttt  
cactgtaatctgaatgcagttgaatatccctgtggggaggggattagcggtgggtgactttcatgcgact  
attgtttttcatgagttgctccatgttttccacaatttaaatggggagcggttgaaagttagaggttcc  
cgaccagaatcacaaaaatactctccacttttactcgaagaagccaggactgttgggttgggggctttt  
tcagaggaggtgctttcagaaaaataaattccgcgaagagattgggatgccccgtagaacctcctacccg  
cacgactcagctcttattcatgatgacaatacagtgagtcgtgggattccaacaggtaagactgcatcca  
ttgcttttag (SEQ ID NO:12)

**FIG. 4C**

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Enteropathogenic *E. coli* NleD Protein Sequence

MRPTSLNLVLHQSSSTSSSMSDIEDIESLVKASSVQWIKNNPQLRFQGTDHNIYQQIEAALDKIGSTETGR  
VLLNAIESISRLKSETVVIHLNSSRLGVMHRDIDAENHRGTGSDFHCLNNAVEYPCGEGISVVDHFAT  
IVFHELLHVFHNLNGERLKVESSRPESQKYSPLLLLEEARTVGLGAFSEEVLSENKFREEIGMPRRTSYP  
HDSALIHDDNTVSLGFQQVRLHPLL (SEQ ID NO:34)

**FIG. 4D**Enterohemorrhagic *E. coli* NleD DNA Sequence

ATGCGCCCTACGTCCCTCAACTTGGTATTACATCAGTCATCAAGGTCGAGCTCAATGTCAGATACAGAT  
ATCGAGTCTCTTGTAAGCATCGAGCGTTCAATGGATAAAAAATAATCCGCAACTTCGTTTCCAGGGG  
ACTGATCATAATATATATCAGCAGATTGAAGCAGCACTCGATAAGATTGGCTCTACAGAGACAGGGCGT  
GTACTCCTGAATGCTATTGAATCAATATCCCGACTTAAATCAGAAACAGTGGTAATACACCTCAACTCT  
TCCAGACTAGGAGTTATGGCACATAGAGATATAGATGCTGAGAACCATCGGGGGACTGGTTCGATTTT  
CACTGTAATCTGAATGCAGTTGAATATCCCTGTGGGGAGGGGATTAGCGTGGTGGACTTTCATGCGACT  
ATTGTTTTTCATGAGTTGCTCCATGTTTTCCACAATTTAAATGGGGAGCGTTTGAAAGTTGAGAGTTCC  
CGAGCAGAAATCACAAAATACTCTCCACTTTTACTCGAAGAAGCCAGGACTGTTGGGTTGGGGGCTTTT  
TCAGAGGAGGTGCTTTTCAGAAAATAAATTCCACGAAGAGATTGGGATGCCCCGTAGAACCTCTACCCG  
CRGACTCAGCTCTTATTCATGATGACAATACAGTGAGTCTGGGATTCCAACAGGTAAGACTGCATCCA  
TTGCTTTAG (SEQ ID NO:13)

**FIG. 4E**Enterohemorrhagic *E. coli* NleD Protein Sequence

mrptslnlvlhqsssrssmsdiedieslvkassvqwiknnpqlrfqgtdhniyqqieaaldkigstetgr  
vllnaiesisrlksetvvihlNSSRLGVMHRDIDAENHRGTGSDFHCLNNAVEYPCGEGISVVDHFAT  
ivfHELLHVFHNLNGERLKVESSRAESQKYSPLLLLEEARTVGLGAFSEEVLSENKFHEEIGMPRRTSYP  
xdsalihddntvslgfqqvrlhpll (SEQ ID NO:35)

**FIG. 4F**

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Citrobacter rodentium NleE DNA Sequences

tactttaatgaatcaccCAATGTATATGATAAGAAGTATATATCTGGCGTAACTAGAGGAGTAGCTGAA  
CTAAAACAGGAAGGATTTATTAACGAGAAAGCCAGGCGACTTGCTTATATGCAAGCAATGTATTCTGTA  
TGTCGGGAAGAGTTTAAACCTATTTCCAGAAACGAAGCTAGTACACCGGAAGGCAGCTGGCTAACAGTT  
ATATCCGGAAAACGCCCAATGGGACAGTTTTCTGTAGATAGCTTATATCATCCTGACTTACATGCATTG  
TGTGAGCTTCCGGATATTTGTTGCAAGATCTTCCCTAAAGAAAACAATGATTTTTTGTATATAGTGATT  
GTGTACAGAAATGACAGCCCTCTGGGAGAACACGAGCAAATCGATTTATAGAATTATATAATATAAAA  
AGAGACATCATGCAGGAATTAAATTATGAATCTCCAGAGTTAAAGGCTGTGAAATCTGAAATGATTATT  
gcacgtgaaatgggagaaatctt (SEQ ID NO:14)

**FIG. 5A**

CAATGTATATGATAAGAAGTATATATCTGGCGTAACTAGAGGAGTAGCTGAACTAAAACAGGAAGGATT  
TATTAACGAGAAAGCCAGGCGACTTGCTTATATGCAAGCAATGTATTCTGTATGTCCGGAAGAGTTTAA  
ACCTATTTCCAGAAACGAAGCTAGTACACCGGAAGGCAGCTGGCTAACAGTTATATCCGGAAAACGCC  
AATGGGACAGTTTTCTGTAGATAGCTTATATCATCCTGACTTACATGCATTGTGTGAGCTTCCGGATAT  
TTGTTGCAAGATCTTCCCTAAAGAAAACAATGATTTTTTGTATATAGTGATTGTGTACAGAAATGACAG  
CCCTCTGGGAGAACACGAGCAAATCGATTTATAGAATTATATAATATAAAAAGAGACATCATGCAGGA  
ATTAAATTATGAATCTCCAGAGTTAAAGGCTGTGAAATCTGAAATGATTATT (SEQ ID NO:15)

**FIG. 5B**Citrobacter rodentium NleE Protein Sequences

YFNESPNVYDKKYISGVTRGVAELKQEGFINEKARRLAYMQAMYSVCPEEFKPISRNEASTPEGSWLTV  
ISGKRPMGQFSVDSLYHPDLHALCELPDICCKIFPKENNDFLYIVIVYRNDSPLGEQRANRFIELYNIK  
RDIMQELNYESPELKAVKSEMI IAREMGEI (SEQ ID NO:36)

**FIG. 5C**

NVYDKKYISGVTRGVAELKQEGFINEKARRLAYMQAMYSVCPEEFKPISRNEASTPEGSWLTVISGKR  
PMGQFSVDSLYHPDLHALCELPDICCKIFPKENNDFLYIVIVYRNDSPLGEQRANRFIELYNIKRDIMQ  
ELNYESPELKAVKSEMI (SEQ ID NO:37)

**FIG. 5D**

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Enteropathogenic *E. coli* NleE DNA Sequence

atgattaatcctgttactaatactcagggcgtgtcccctataaataactaaatgatgctgaacatgtggg  
aaaaatatattacccgaaaattaaacatgattactttaatgaatcacccaatatatatgataagaagtat  
atatccggtataaccagaggagtagctgaactaaaacaggaagaatttggttaacgagaaagccagacgg  
ttttcttatatgaagactatgtattctgtatgtccagaagcgtttgaacctatttccagaaatgaagcc  
agtacaccggaaggaagctggctaacagttatatccggaaaacgccaatggggcagttttctgtagat  
agttttatacaatcctgattttacatgcattatgtgagcttccggacatttggtgtaagatcttccctaaa  
gaaaataatgattttttatacatagttgttgtgtacagaaatgacagccctctaggagaacaacgggca  
aatagatttatagaattatataatataaaaagagatatcatgcaggaattaaattatgagttaccagag  
ttaaaggcagtaaaatctgaaatgattatcgcaogtgaaatgggagaaatctttagctacatgcctggg  
gaaatagacagtttatatgaaatacataaataataaactttctaaaattgagtag (SEQ ID NO:16)

**FIG. 5E**Enteropathogenic *E. coli* NleE Protein Sequence

MINPVTNTQGVSPINTKYAEHVVKNIYPKIKHDYFNESPNYDKKYISGITRGVAELKQEEFVNEKARR  
FSYMKTMYSVCPEAFEPISRNEASTPEGSWLTVISGKRPMGQFSVDSLYNPDLHALCELPDICCKIFPK  
ENNDFLYIVVYRNDSPLEGEQRANRFIELYNIKRDIMQELNYELPELKAVKSEMIAREMGEIFSYPG  
EIDSYMKYINNKLKSKIE (SEQ ID NO:38)

**FIG. 5F**

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Enterohemorrhagic *E. coli* NleE DNA Sequence

ATGATTAATCCTGTTACTAATACTCAGGGCGTGTCCCCTATAAATACTAAATATGCTGAACATGTGGTG  
AAAAATATTTACCCGGAAATTAAACATGATTACTTTAATGAATCACCCAATATATATGATAAGAAGTAT  
ATATCCGGTATAACCAGAGGAGTAGCTGAACTAAAACAGGAAGAATTTGTTAACGAGAAAGCCAGACGG  
TTTTCTTATATGAAGACTATGTATTCTGTATGTCCAGAAGCGTTTGAACCTATTTCCAGAAATGAAGCC  
AGTACACCGGAAGGAAGCTGGCTAACAGTTATATCCGGAACGCCCCAATGGGGCAGTTTTCTGTAGAT  
AGTTTATACAATCCTGATTACATGCATTATGTGAGCTTCCGGACATTTGTTGTAAGATCTTCCCTAAA  
GAAAATAATGATTTTTTATACATAGTTGTTGTGTACAGAAATGACAGCCCTCTAGGAGAACAACGGGCA  
AATAGATTTATAGAATTATATAATATAAAAAGAGATATCATGCAGGAATTAAATTATGAGTTACCAGAG  
TTAAAGGCAGTAAATCTGAAATGATTATCGCACGTGAAATGGGAGAAATCTTTAGCTACATGCCTGGG  
GAAATAGACAGTTATATGAAATACATAAATAATAAACTTTCTAAATTGAGTAG (SEQ ID NO:17)

**FIG. 5G**Enterohemorrhagic *E. coli* NleE Protein Sequence

minpvtntqgvspintkyaehvvkniypeikhdyfnespnidydkkyisgitrgvaelkgeefvnekarr  
fsymkmysvcpeafepisrneastpegswltvisgkrpmgqfsvdslynpdldhalcelpdicckifpk  
enndflyivvvyrndsplgegranrfielynikrdimgelnyelpelkavksemiaremgeifsympg  
eidsymkyinnklskie (SEQ ID NO:39)

**FIG. 5H**

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Citrobacter rodentium NleF DNA Sequences

atgttaccaacaagtgggttcttcAGCAAATCTTTACTCATGGATGTATATCTCAGGAAAAGAGAATCCT  
 TCGACTCCGGAATCAGTAAGTGAACCTTAATCATAATCATTTTTCTTTCTCCTGAATTACAGGAGAACTG  
 GATGTTATGTTCCGCATATATTCATGTGCCAGAAACAATGATGAGCGTGAGAATATTTACCCGGAGCTA  
 AGGGATTTTGTAAGTAGCCTAATGGATAAGAGAAACAATGTGTTTGAGGTGATAAATGAAGATACTGAT  
 GAGGTGACCGGAGCTCTGAGAGCGGGAATGACGATAGAGGACAGGGATAGTTATATCAGGGATCTTTTT  
 TTTCTGCATTTCATTGAAAGTAAAAATTGAGGAAAGCAGACAAGATAAAGAGGATTGGAAATGTAAAGTT  
 TATGATCTGCTATGTCCGCATCATTTCTTCAGAGCTATATGGGGATCTACGGGCAATCAAATGCCTCGTT  
 GAAGGATGCAGTGATGATTTTAGTCCTTTTGATACTATTAAGGTGCCGGATCTTACTTAcaacaagga  
 tctttacaatgtgatga (SEQ ID NO:18)

**FIG. 6A**

AGCAAATCTTTACTCATGGATGTATATCTCAGGAAAAGAGAATCCTTCGACTCCGGAATCAGTAAGTGA  
 ACTTAATCATAATCATTTTTCTTTCTCCTGAATTACAGGAGAACTGGATGTTATGTTCCGCATATATTC  
 ATGTGCCAGAAACAATGATGAGCGTGAGAATATTTACCCGGAGCTAAGGGATTTTGTAAGTAGCCTAAT  
 GGATAAGAGAAACAATGTGTTTGAGGTGATAAATGAAGATACTGATGAGGTGACCGGAGCTCTGAGAGC  
 GGGAATGACGATAGAGGACAGGGATAGTTATATCAGGGATCTTTTTTTTTCTGCATTTCATTGAAAGTAAA  
 AATTGAGGAAAGCAGACAAGATAAAGAGGATTGGAAATGTAAAGTTTATGATCTGCTATGTCCGCATCA  
 TTCTTCAGAGCTATATGGGGATCTACGGGCAATCAAATGCCTCGTTGAAGGATGCAGTGATGATTTTAG  
 TCCTTTTGATACTATTAAGGTGCCGGATCTTACTTA (SEQ ID NO:19)

**FIG. 6B**Citrobacter rodentium NleF Protein Sequences

MLPTSGSSANLYSWMYISGKENPSTPESVSELNHNHFLSPELQEKLDVMFAIYSCARNNDERENIYPEL  
 RDFVSSLMdkRNNVFEVINEDTDEVTGALRAGMTIEDRDSYIRDLFFLHSLKVKIEESRQDKEDWKCKV  
 YDLLCPHHSSELYGDLRAIKCLVEGCSDDFSPFDTIKVPDLTYNKGSLQC (SEQ ID NO:40)

**FIG. 6C**

ANLYSWMYISGKENPSTPESVSELNHNHFLSPELQEKLDVMFAIYSCARNNDERENIYPELRDFVSSLM  
 DKRNNVFEVINEDTDEVTGALRAGMTIEDRDSYIRDLFFLHSLKVKIEESRQDKEDWKCKVYDLLCPHH  
 SSELYGDLRAIKCLVEGCSDDFSPFDTIKVPDL (SEQ ID NO:41)

**FIG. 6D**

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Enteropathogenic *E. coli* NleF DNA Sequence

atgttaccacaagtgggttcttcagcaaactctttattcatggatgtatgtatcaggaagaggttaaccct  
tcgactccggaatcagtaagtgaagcttaatacataatcactttctttctcctgaattacaagataaactt  
gatgttatggctctctatatattcatgtgccagaaataataatgagcttgaggaaatttttcaagagcta  
agtgccttttgtaagtgggctgatggataagagaaatagtgtatttgaggtgagaaatgaaaatactgat  
gaggttgctcggagcgcctgagggcggaatgacgatagaggatagggatagttatatcagggatcttttt  
tttctgcattcattgaaagtaaaaattgaggaaagtagacaaggcaaagaagattcgaaatgtaaagtt  
tataatctgctatgtccgcatactcttcagagctatatgggtgatctacgagcaatgaaatgcctcgtg  
gaaggatgcagtgatgattttaatccttttgatattattagggtaggtagatcttacttacaacaaagga  
tctttacaatgtggatga (SEQ ID NO:20)

**FIG. 6E**Enteropathogenic *E. coli* NleF Protein Sequence

MLPTSGSSANLYSWMYVSGRGNPSTPESVSELNHNHFLSPELQDKLDVMVSIYSCARNNNELEEIFQEL  
SAFVSGLMDKRNSVFEVRNENTDEVVGALRAGMTIEDRDSYIRDLFFLHSLKVKIEESRQKEDSKCKV  
YNLLCPHHSSELYGDLRAMKCLVEGCSDDFNPFDIIRVPDLTYNKGS LQCG (SEQ ID NO:42)

**FIG. 6F**Enterohemorrhagic *E. coli* NleF DNA Sequence

ATGTTACCAACAAGTGGTTCTTCAGCAAATCTTTATTTCATGGATGTATGTATCAGGAAGAGGTAACCCCT  
TCGACTCCGGAATCAGTAAGTGAGCTTAATCATAATCACTTTCTTTCTCCTGAATTACAAGATAAACTT  
GATGTTATGGTCTCTATATATTTCATGTGCCAGAAATAATAATGAGCTTGAGGAAATTTTCAAGAGCTA  
AGTGCTTTTGTAAGTGGGCTGATGGATAAGAGAAATAGTGTATTGAGGTGAGAAATGAAAATACTGAT  
GAGGTTGTCCGAGCGCTGAGGGCGGGAATGACGATAGAGGACAGGGATAGTTATATCAGGGATCTTTTT  
TTTCTGCATTCAATTGAAAGTAAAAATTGAGGAAAAGTAGACAAGGCAAAGAAGATTCGAAATGTAAAGTT  
TATAATCTGCTATGTCCGCATCACTCTTCAGAGCTATATGGTGATCTACGAGCAATGAAATGCCTCGTG  
GAAGGATGCAGTGATGATTTTAATCCTTTTGATATTATTAGGGTACCAGATCTTACTTACAACAAAGGA  
TCTTTACAATGTGGATGA (SEQ ID NO:21)

**FIG. 6G**Enterohemorrhagic *E. coli* NleF Protein Sequence

mlptsgssanlyswmyvsgrgnpstpesvselnhnhflspelqdkldvmvsiyscarnnneleEIFQEL  
safvsglmdkrnsVFEVRNENTDEVVGALRAGMTIEDRDSYIRDLFFLHSLKVKIEESRQKEDSKCKV  
ynllcphhsselygdlramkclvegcsddfnpfdiirvpdltynkgs lqcg (SEQ ID NO:43)

**FIG. 6H**



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\*

SGH	MCPDNTHAKKQYLTPGNDIHYPGQTNHDACFIPVSVRQYA
Caif	MCEG-----YV
GrlA	M-----ESKNSDYVIPDSVKNYN

	****+++ *    +++*+    ++*    **    ++    ++
SGH	GEPLYIIIVAHWCLLQONWVORNOIAEAFHITARRASYLIA
Caif	EKPLYLLIAEWMMAENRWVIAREISIHFDIEHSAVNTLT
GrlA	GEPLYILVSLWCKLQEKWISRNDIAEAFGINLRRASFIIT

Helix-turn-helix motif

	**+    +    +    +    +    +    ++
SGN	YLRSKTSRVVSICRHQTLPN-KARRYEIY-VIRVLDSPTP
Caif	YILSEVTEISCEVKMIP-NKLEGRGCQCQRLVKVVDIDEQ
GrlA	YISRRKEKISFRVRYVSYGNLHYKRLEIF-IYNVNLEAAP

	+    +    *+    *+ +
SGN	STRREKAGPP-----LVSKRRVGNGDRSM--ANELWNRLC
Caif	IYARLRNNSREKLVGVRKTPRIPAVPLTELNREQKWQMM-
GrlA	TESHVSTGPK-----RKTLRVGNGIVG---QSSIWNEM-

	+***+    +    +
SGN	SNRNAGKILKKKEDEDDGT (170 aa)
Caif	----LSKSMRR (131 aa)
GrlA	-----IMRRKKE----S (135 aa)

FIG. 7

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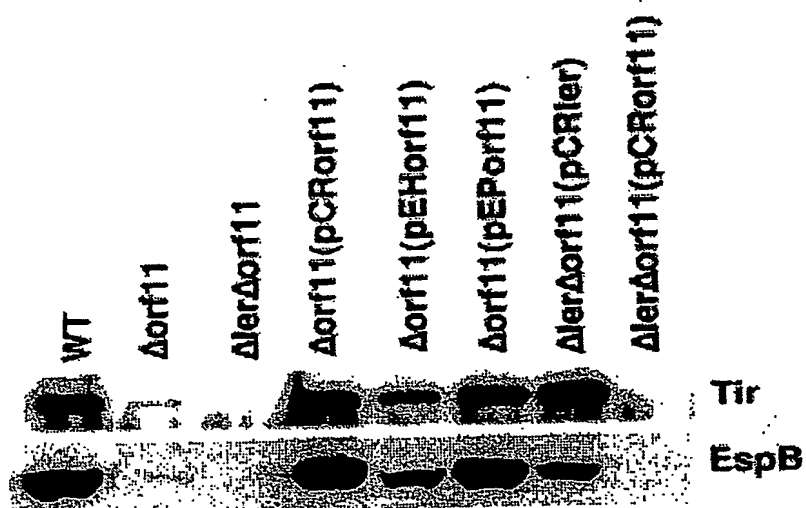


FIG. 8

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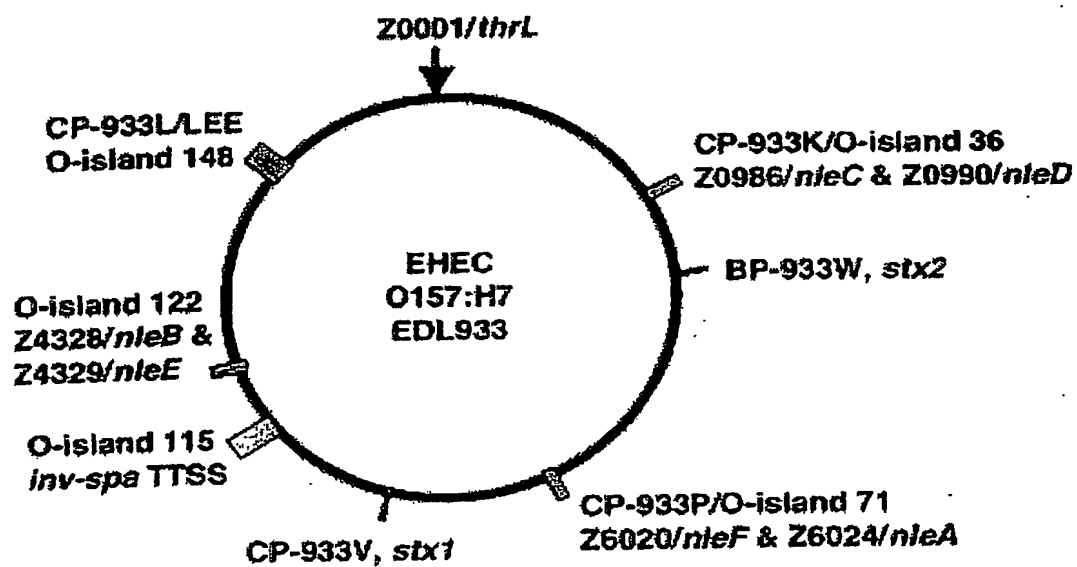
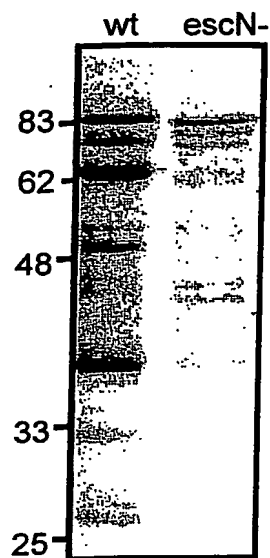


FIG. 9

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A.



B.

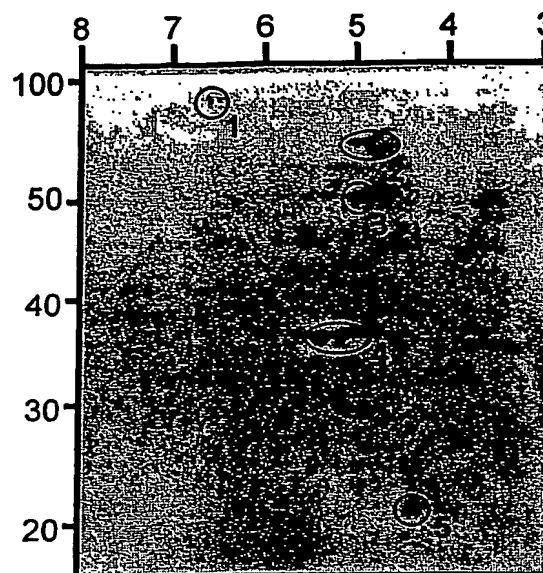


FIG. 10



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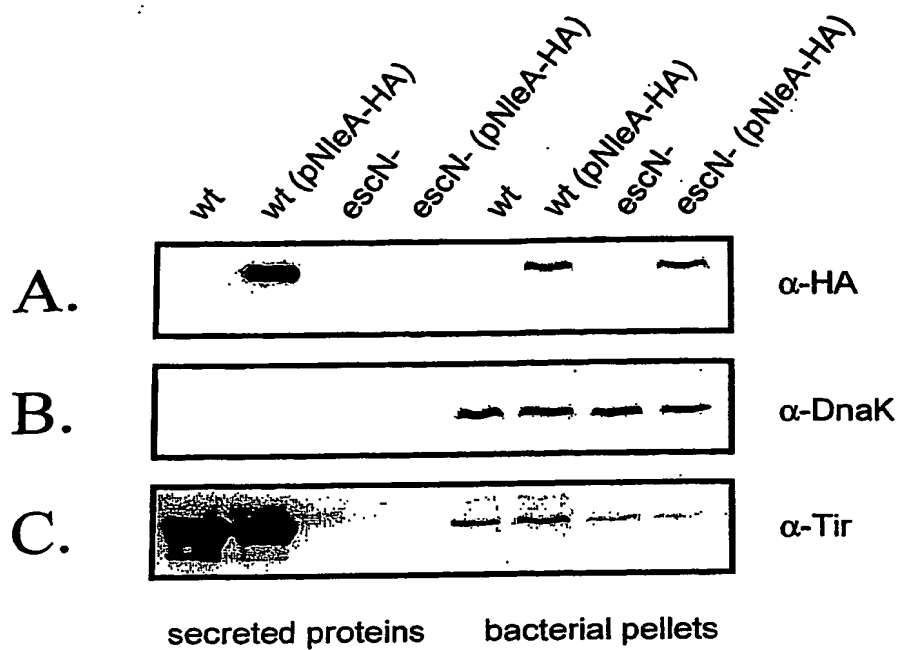


FIG. 12

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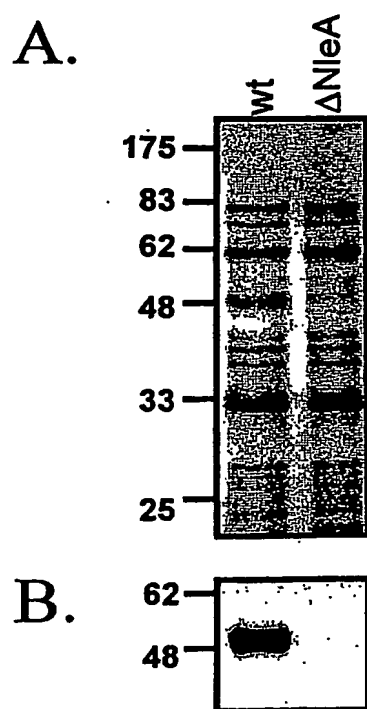
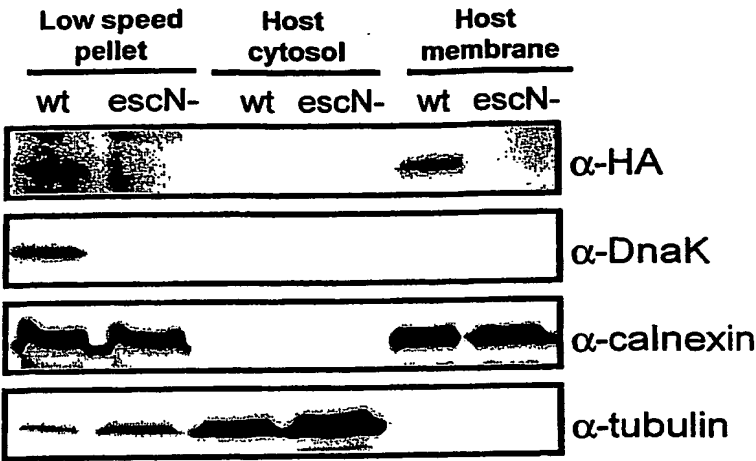


FIG. 13

A.



B.

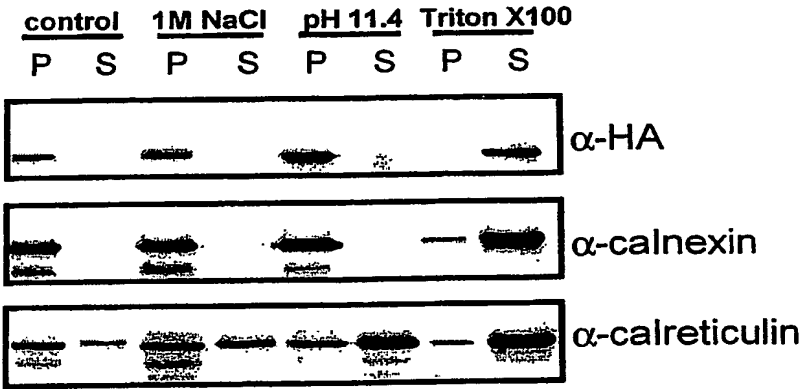


FIG. 14



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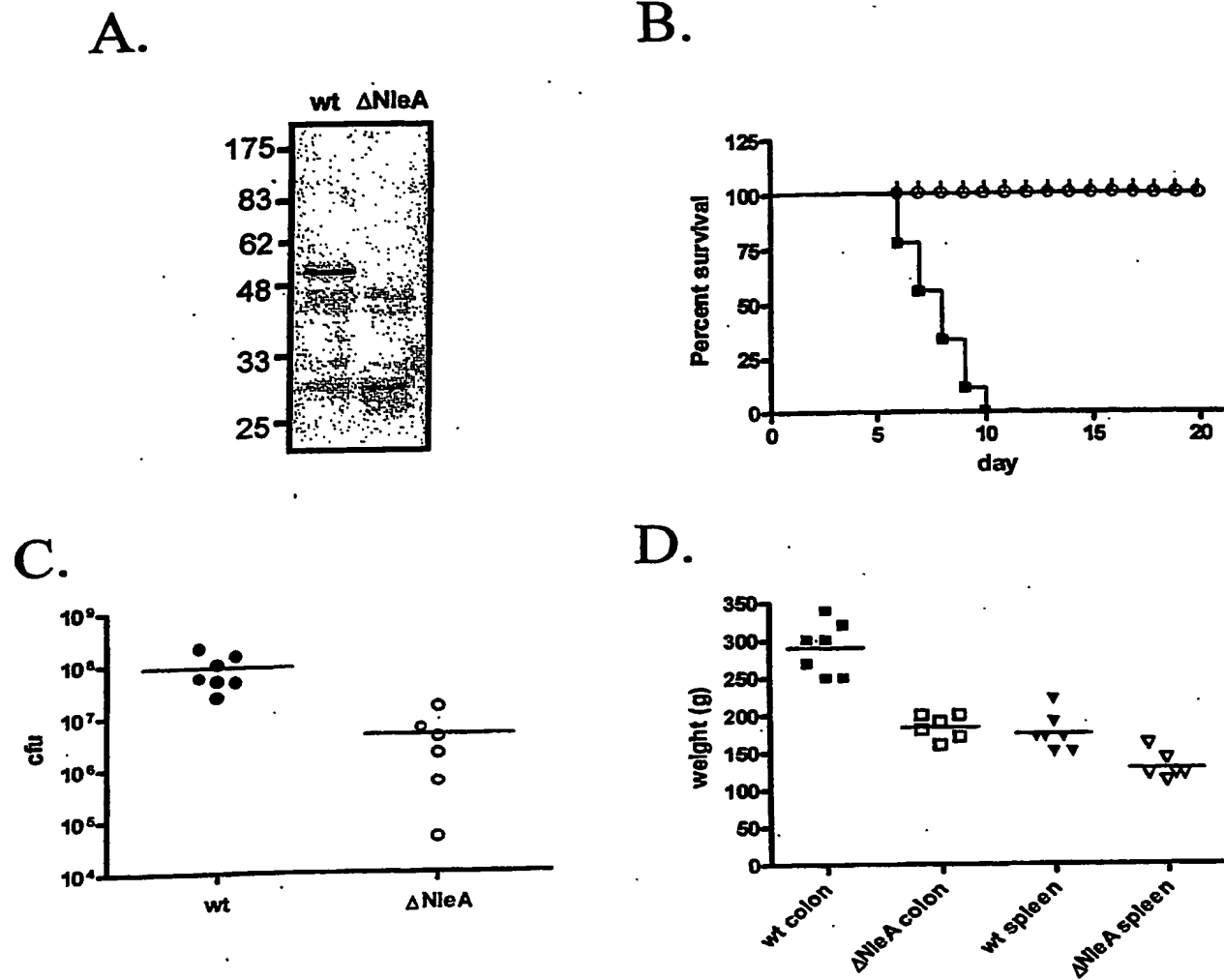


FIG. 15

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Enterohemorrhagic *E. coli* NleG homolog Nucleotide Sequence

ATGAATGTCCTTCGAGCTCAAGTAGCATCTAGCGGTCGAGGGGAGTTTACATTAGGTAAT  
GAGACTGTCAGCATTGTATTTAATGAAACCGATGGGCGTTTTCTATCCAGCGGCAGTAGT  
GGGGGATTGCTTACTGAGTTATTCCTTTATGGGTTTAATAACGGCCCTGAAGCTCTTCGC  
GATAGGATGCTCAGTATGCTTTCGGACTCAGGTGAAGCACAATCGCAAGAGAGTATTCAG  
GACAAAATATCTCAATGTAAGTTTCCTGTTAGTTCAGGAAATTTCCAGTGCCCGCCAGAG  
TCTATTCAGTGTCCAATTACACTAGAGAGACCCGAAGAAGGAGTGTTCGCAAAAATTCA  
GATAGTTCGGCAGTATGCTGCTTATTTGATTTTGATGCATTTTCTCGTTTAGCTAGTGAA  
GGCTCATATCATCCACTGACCCGAGAACCAATAACGGCATCAATGATTATAAGTCCTGAT  
AAATGTGTTTATGATCCTATCAAGGGAACTTCATTATAAAAGATAGTTAA  
(SEQ ID NO: 61)

**FIG. 16A**Enterohemorrhagic *E. coli* NleG homolog Protein Sequence

MNVLRAQVASSGRGEFTLGNETVSIVFNETDGRFLSSGSSGGLLTEFLYGFNNGPEALRDRMLSMLSD  
SGEAQSQESIQDKISQCKFPVSSGNFQCPPESIQCPITLERPEEGVFVKNSDSSAVCCLFDFDAFSRLA  
SEGSYHPLTREPITASMIISPDKCVDPIKGNFIKDS (SEQ ID NO: 73)

**FIG. 16B**

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Enterohemorrhagic *E. coli* NleH1 Nucleotide Sequence

ATGTTATCGCCCTCTTCTATAAATTTGGGATGTTTCATGGAATTCTTTAACCAGAAACCTG  
ACTTCGCCTGATAATCGTGTTTTATCCTCTGTAAGGGATGCTGCTGTTCACTCTGATAGC  
GGGACGCAAGTAACGGTTGGCAACAGAACATATCGTGTTGTGGTCACTGATAATAAGTTT  
TGCGTTACAAGAGAAAGTCATAGTGGTTGTTTTACTAATCTGTTGCACAGGTTGGGATGG  
CCTAAGGGAGAGATTAGCAGAAAAATTGAGGCTATGCTGAATACATCGCCAGTGAGCACG  
ACTATAGAAAAGAGGCTCTGTTTCATTCTGAACAGACCTGATTTACCTCCAGTGGATTATGCG  
CAGCCGGAGTTACCTCCAGCGGATTATACTCAATCAGAGTTGCCGAGGGTTAGCAACAAT  
AAATCACCCGTGCCAGGTAATGTTATTGGTAAAGGTGGTAATGCTGTCGTGTATGAAGAT  
ATGGAAGATACAACAAAAGTGTGAAGATGTTTACTATATCTCAAAGCCATGAAGAGGTG  
ACAAGCGAAGTTCGTTGTTTCAATCAGTATTATGGTTCCGGGAGTGCAGAGAAAAATATAT  
AATGATAATGGAAATGTTATTGGTATTAGAATGAATAAAATAAATGGGGAATCTCTTTTG  
GATATTCCATCATTACCAGCACAAAGCTGAACAGGCTATTTACGATATGTTTGACAGACTG  
GAGAAAAAAGGAATCTTTTTGTTGATACAACAGAAACAAATGTTTTATATGATCGTATG  
AGAAATGAATTTAATCCAATAGATATATCATCTTATAATGTTTCTGATATTTTCATGGAGT  
GAACATCAAGTCATGCAATCTTATCACGGAGGAAAGCTGGATCTTATTAGTGTAGTATTA  
AGTAAGATATAA

(SEQ ID NO: 62)

**FIG. 17A**Enterohemorrhagic *E. coli* NleH1 Protein Sequence

MLSPSSINLGCSWNSLTRNLTSPDNRVLSSVRDAAVHSDSGTQVTVGNRTYRVVVTDNKF  
CVTRESHSGCFTNLLHRLGWPKGEISRKIEAMLNTSPVSTTIERGSVHSNRPDLPVDYA  
QPELPPADYTQSELPRVSNNKSPVPGNVIGKGGNAVVEDMEDTTKVLKMFITISQSHEEV  
TSEVRCFNQYYGSGSAEKIYNDNGNVIGIRMNKINGESLLDIPSLPAQAEQAIYDMFDRL  
EKKGILFVDTTETNVLYDRMRNEFNPIDISSYNVSDISWSEHQVMQSYHGGKLDLISVVL  
SKI (SEQ ID NO: 74)

**FIG. 17B**

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Enterohemorrhagic *E. coli* NleH2 Nucleotide Sequence

ATGTTATCGCCATATTCTGTAAATTTGGGATGTTTCATGGAATTCTTTAACCAGAAACCTG  
ACTTCGCCTGATAATCGTGTTTTATCCTCTGTAAGGGATGCTGCCGTTTCATTCTGATAAT  
GGGGCGCAAGTAAAGGTTGGCAACAGAACATATCGTGTTGTTGCCACCGATAATAAGTTT  
TGCGTTACAAGAGAAAAGTCATAGTGGTTGTTTTACTAATCTGTTGCACAGGCTGGGATGG  
CCTAAGGGGGAGATTAGCAGGAAAATTGAGGTCATGCTGAATGCATCACCAGTGAGCGCT  
GCTATGGAAAGAGGCATTGTTTCATTGCAACAGACCTGATTTACCTCCTGTTGATTATGCA  
CCGCCAGAGTTACCGAGTGTGGACTATAACAGGTTGTCAGTACCTGGTAATGTTATTGGC  
AAAGGGGGGAACGCTGTAGTATATGAAGATGCTGAGGATGCAACAAAAGTCCTGAAGATG  
TTTACTACATCTCAAAGCAATGAAGAGGTGACAAGCGAAGTTCGTTGCTTCAACCAATAT  
TATGGTGCCGGGAGTGCAGAAAAAATATATGGCAATAATGGTGATATTATTGGTATTAGA  
ATGGATAAAATAAATGGAGAATCGCTTTTAAATATTTTCGTCCTTGCCAGCACAGGCTGAG  
CATGCTATTTACGATATGTTTGATAGACTGGAGCAAAAAGGAATTCTTTTTGTGCGATACA  
ACAGAGACAAATGTCCTTATATGACCGCGCGAAGAATGAGTTTAATCCAATAGATATATCA  
TCTTATAATGTTTCCGACCGTTTCATGGAGTGAAAAGTCAAATAATGCAATCTTATCATGGC  
GGAAAGCAAGATCTTATTAGTGTGGTATTAAGTAAAATTTAG (SEQ ID NO: 63)

**FIG. 18A**Enterohemorrhagic *E. coli* NleH2 Protein Sequence

MLSPYSVNLGCSWNSLTRNLTPDNRVLSSVRDAAVHSDNGAQVKVGNRTYRVVATDNKF  
CVTRESHSGCFNLLHRLGWPKGEISRKIEVMLNASPVSAAMERGIVHSNRPDLPPVDYA  
PPELPSVDYNRLSVPGNVIGKGNNAVVEDATKVLKMF TTSQSNEEVTSEVRCFNQY  
YGAGSAEKIYGNGDIIGIRMDKINGESLLNISSLPAQAEHAIYDMFDRLEQKGILFVDT  
TETNVLYDRAKNEFNPIDISSYNVSDRSWSESQIMQSYHGGKQDLISVVLSKI (SEQ ID NO: 75)

**FIG. 18B**

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Enterohemorrhagic *E. coli* Z2076 Nucleotide Sequence

ATGGTAATGCCTGGATTAGTATCATATATATCATCGACTTCATTGCGGAATGAGATGGCG  
GAGATGCGTCAGCAGGTAATGGAAGGGCAGATTGGTGGATTTCTCCTGGGAGGGGAGAGA  
GTTAGAGTTTCTTATTTATTTCAATTGCATTAA (SEQ ID NO: 64)

**FIG. 19A**Enterohemorrhagic *E. coli* Z2076 Protein Sequence

MVMPGLVSYISSTSFANEMAEMRQQVMEGQIGGFLLGGERVRVSYLFQLH  
(SEQ ID NO: 76)

**FIG. 19B**

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Enterohemorrhagic *E. coli* Z2149 Nucleotide Sequence

ATGCCATTAAACCTCAGATATTAGATCACATTCATTTAATCTTGGGGTGGAGGTTGTTTCGT  
GCCCGAATTGTAGCCAATGGGCGCGGAGATATTACAGTCGGTGGTGAAACTGTCAGTATT  
GTGTATGATTCTACTAATGGGCGCTTTTCATCCAGTGGCGGTAATGGCGGATTGCTTTCT  
GAGTTATTGCTTTTGGGATTTAATAGTGGTCCTCGAGCCCTTGGTGAGAGAATGCTAAGT  
ATGCTTTTCGGACTCAGGTGAAGCACAATCGCAAGAGAGTATTCAGAACAAAATATCTCAA  
TGTAAGTTTTCTGTTTGTCCAGAGAGACTTCAGTGCCCGCTTGAGGCTATTCAGTGTCCA  
ATTACACTGGAGCAGCCTGAAAAAGGTATTTTTGTGAAGAATTCAGATGGTTCAGATGTA  
TGTACTTTATTTGATGCCGCTGCATTTTCTCGTTTGGTTGGTGAAGGCTTACCCACCCA  
CTGACCCGGGAACCAATAACGGCATCAATAATTGTAAACATGAAGAATGCATTTATGAC  
GATACCAGAGGAACTTCATTATAAAGGGTAATTGA (SEQ ID NO: 65)

**FIG. 20A**Enterohemorrhagic *E. coli* Z2149 Protein Sequence

MPLTSDIRSHSFNLGVEVVRARIVANGRGDITVGGETVSIVYDSTNGRFSSSGGNGLLS  
ELLLLGFN SGPRALGERMLSMLSDSGEASQESIQNKISQCKFSVCPERLQCPLEAIQCP  
ITLEQPEKGIFVKNSDGS DVCTLFDAAAF SRLVGEGLPHPLTRE PITASIIVKHEECIYD  
DTRGNFIKGN (SEQ ID NO: 77)

**FIG. 20B**

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Enterohemorrhagic *E. coli* Z2150 Nucleotide Sequence

atgcctgtta ccaccttaag tatcccaagt atatctcaat tatctcctgc aagagtacag  
tctttgcagg atgcagccag acttgaaaagt ggaataagaa tatccattgg tagtggccaa  
tattctgttc actatgtcca actactggat ggattttcag ttgaaccggt gagaggaggc  
ttactggata ggctattggg gcgtgagcat cgaatggata gaagggctgt ggctctggaa  
aggcaattaa atggaggtgt cgatttttta agtagtgta ataactattt tcagagtgtc  
atggcagaac acagagaaaa taaaacaggt aataaaatat taatggaaaa aataaattct  
tgtgtatttg gaacggattc taatcacttt tcttgcccg agtcattttt gacatgcccg  
ataacgctgg acacacctna gactggagtg ttcagagaa actcacgagg tgctgagata  
tgctctctat atgataagga tgcgttagtg caacttggtg aaactggtgg aactcatcct  
ctgagtcgag aacctataac agaatcaatg attatgagaa aagacgaatg tcactttgat  
gcaaaaagag aagctttttg ttgtaagtga  
(SEQ ID NO: 66)

**FIG. 21A**Enterohemorrhagic *E. coli* Z2150 Protein Sequence

MPVTTLSIPSISQLSPARVQSLQDAARLESGIRISIGSGQYSVHYVQLLDGFSVEPVRGGLLDRLGRE  
HRMDRRAVALERQLNGGVDFLSSVNYYFQSVMAEHRENKTGNKILMEKINSCVFGTDSNHFSCPESFLT  
CPITLDTPTXGTFMRNSRGAEICSLYDKDALVQLVETGGTHPLSREPITESMIMRKDECHFDAKREAF  
CK (SEQ ID NO:78)

**FIG. 21B**

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Enterohemorrhagic *E. coli* Z2151 Nucleotide Sequence

ATGCCTGTAGATTTAACGCCTTATATTTTACCTGGGGTTAGTTTTTTGTCTGACATTCCT  
CAAGAAACCTTGCTCGAGATACGTAATCAGACTATTCGTGGAGAAGCTCAAGTAAGACTG  
GGTGAGTTGATGGTGTCAATACGACCTATGCAGGTAAATGGATATTTTATGGGAAGTCTT  
AACCAGGATGGTTTATCGAATGATAACATCCAGATTGGCCTTCAATATATAGAACATATT  
GAACGTACACTTAATCATGGTAGTTTGACAAGCCGTGAAGTTACAGTACTGCGTGAAATT  
GAGATGCTCGAAAAATATGGAATTGCTTTCTAACTACCAGTTAGAGGAGTTGTTAGATAAA  
ATTGAAGTATGTGCATTTAATGTGGAGCATGCACAATTGCAAGTGCCAGAGAGCTTACGA  
ACATGCCCTGTTACATTATGTGAACCAGAAGATGGGGTATTTATGAGGAATTCAATGAAT  
TCAAATGTTTGTATGTTGTATGATAAAATGTCATTAATATATCTTGTTAAAACAAGGGCG  
GCTCATCCTTTGAGCAGGGAATCAATCGCAGTTTCAATGATTGTAGGAAGAGATAATTGT  
GCTTTTGACTCTGACAGAGGTAACCTTCGTTTTAAAAAATTAA (SEQ ID NO: 67)

**FIG. 22A**Enterohemorrhagic *E. coli* Z2151 Protein Sequence

MPVDLTPYILPGVSFLSDIPQETLSEIRNQTIERGEAQVRLGELMVSIRPMQVNGYFMGSL  
NQDGLSNDNIQIGLQYIEHIERTLNHGSLTSREVTVLREIEMLENMELLSNYQLEELLDK  
IEVCAFNV EHAQLQVPESLRTCPVTLCPEPDGVFMRNSMNSNVCMLYDKMSLIYLVKTRA  
AHPLSRESIAVSMIVGRDNCADFSDRGNFVLKN (SEQ ID NO: 79)

**FIG. 22B**



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Enterohemorrhagic *E. coli* Z2337 Nucleotide Sequence

ATGCCTGTAGATTTAACGCCTTATATTTTACCTGGGGTTAGTTTTTTGTCTGACATTCCCT  
CAAGAAACCTTGTCTGAGATACGTAATCAGACTATTCGTGGAGAAGCTCAAATAAGACTG  
GGTGAGTTGATGGTGTCAATACGACCTATGCAGGTAAATGGATATTTTATGGGAAGTCTT  
AACCAGGATGGTTTATCGAATGATAATATCCAGATTGGCCTTCAATATATAGAACATATT  
GAACGTACACTTAATCATGGTAGTTTGACAAGCCGTGAAGTTACAGTACTGCGTGAAATT  
GAGATGCTCGAAAATATGGATTTGCTTCTAACTACCAGTTAGAGGAGTTGTTAGATAAA  
ATTGAAGTATGTGCATTTAATGTGGAGCATGCACAATTGCAAGTGCCAGAGAGCTTACGA  
ACATGCCCTGTTACATTATGTGAACCAGAAGATGGGGTATTTATGAGGAATTCAATGAAT  
TCAAATGTTTGTATGTTGTATGATAAAATGGCATTAAATACATCTTGTTAAACAAGGGCG  
GCTCATCCTTTGAGCAGGGAATCAATCGCAGTTTCAATGATTGTAGGAAGAGATAATTGT  
GCTTTTGACCCTGACAGAGGTAACCTTCGTTTTTAAAAAATTAA (SEQ ID NO: 68)

**FIG. 23A**Enterohemorrhagic *E. coli* Z2337 Protein Sequence

MPVDLTYPYILPGVSFLSDIPQETLSEIRNQTIERGEAQIRLGELMVSIRPMQVNGYFMGSL  
NQDGLSNDNIQIGLQYIEHIERTLNHGSLTSREVTVLREIEMLENMDLLSNYQLEELLDK  
IEVCAFNVEHAQLQVPESLRTCPVTLCEPEDGVFMRNSMNSNVCMLYDKMALIHLVKTRA  
AHPLSRESIAVSMIVGRDNCAPDRGNFVLKN (SEQ ID NO: 80)

**FIG. 23B**

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Enterohemorrhagic *E. coli* Z2338 Nucleotide Sequence

ATGCCTGTTACCACCTTAAGTATCCCAAGTATATCTCAATTATCTCCTGCAGGAGTACAG  
TCTTTGCAGGATGCTGCCAGACTTGAAAGTGGAATAAGAATATCCATTGGTAGTGGCCAA  
TATTCTGTTCACTATGTCCAGCTACTGGATGGATTTTCAGTTGAACCGGTGAGAGGAGGC  
TTACTGGATAGGCTATTGGGGCGTGAGCATCGAATGGAGAGAAGGGCTGTGGCTCTGGAA  
AGGCAATTAAATGGAGGTGTCGATTTTTTAAGTAGTGTTAATAACTATTTTCAGAGTGTC  
ATGGCAGAACACAGAGAAAATAAAACAAGTAATAAAATATTAATGGAAAAATAAATTCT  
TGTTTATTTAGACCTGATTCTAATCACTTTTCTTGCCCGGAGTCATTTTGTGACATGCCCG  
ATAACGCTGGACACACCTGAGACTGGGGTGTTTCATGAGAACTCACGAGGTGCTGAGATA  
TGCTCTCTATATGATAAGGACGCGTTAGTGCAACTTGTTGAACTGGTGGAGCTCATCCT  
CTGAGTCGAGAACCTATAACAGAATCAATGATTATGAGAAAAGATGAATGTCACTTTGAT  
ACAAAAGAGAAGCTTTTTGTTGTAAGTGA (SEQ ID NO: 69)

**FIG. 24A**Enterohemorrhagic *E. coli* Z2338 Protein Sequence

MPVTTLSIPSISQLSPAGVQSLQDAARLESGIRISIGSGQYSVHYVQLLDGFSVEPVRRG  
LLDRLLGREHRMERRAVALERQLNGGVDFLSSVNNYFQSVMAEHRENKTSNKILMEKINS  
CLFRPDSNHFSCPESFLTCPITLDTPETGVFMRNSRGAEICSLYDKDALVQLVETGGAHP  
LSREPITESMIMRKDECHFDTKREAFCK (SEQ ID NO: 81)

**FIG. 24B**

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Enterohemorrhagic *E. coli* Z2339 Nucleotide Sequence

ATGCCATTAACCTCAGATATTAGATCACATTCATTTAATCTTGGGGTGGAGGTTGTTTCGT  
GCCCCGAATTGTAGCCAATGGGCGCGGAGATATTACAGTCGGTGGTGAAACTGTCAGTATT  
GTGTATGATTCTACTAATGGGCGCTTTTCATCCAGTGGCGGTAATGGCGGATTGCTTTCT  
GAGTTATTGCTTTTGGGATTTAATAGTGGTCCTCGAGCCCTTGGTGAGAGAATGCTAAGT  
ATGCTTTCGGACTCAGGTGAAGCACAAATCGCAAGAGAGTATTCAGAACAAAATATCTCAA  
TGTAAGTTTTCTGTTTGTCCAGAGAGACTTCAGTGCCCGCTTGAGGCTATTCARTGTCCA  
ATTACACTGGAGCAGCCTGAAAAAGGTATTTTTGTGAAGAATTCAGATGGTTCAGATGTA  
TGTACTTTATTTGATGCCGCTGCATTTTCTCGTTTGGTTGGTGAAGGCTTACCCACCCA  
CTGACCCGGGAACCAATAACGGCATCAATAATTGTAAACATGAAGAATGCATTTATGAC  
GATACCAGAGGAACTTCGTTATAAAGGGTAATTGA (SEQ ID NO: 70)

**FIG. 25A**Enterohemorrhagic *E. coli* Z2339 Protein Sequence

MPLTSDIRSHSFNLGVEVVRARIVANGRGDITVGGETVSIVYDSTNGRFSSSGGNGGLLS  
ELLLLGFNSGPRALGERMLSMLSDSGEAQSQESIQNKISQCKFSVCPERLQCPLEAIQCP  
ITLEQPEKGIFVKNSDGSVDCTLFDAAFSRLVGEGLPHPLTREPIIASIIVKHEECIYD  
DTRGNFVIKGN (SEQ ID NO: 82)

**FIG. 25B**

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Enterohemorrhagic *E. coli* Z2560 Nucleotide Sequence

atggacgctt ttattgtaga tcctgttcaa ggggaactat attcggggtt aagccataca  
gaactagccg atatcattag attggctgat tctgttgaaa atcaattgaa tggaggcaat  
tcatttcctg atgtattcag tacatatatg gggcagggtta tttctgaatt tatgcatagt  
aatgataaca gaattgaatt gttacagcgg cgattacatt catgttcatt tttagttaat  
attgaagaaa tgtcttacat agatgaagca ttacagtgcc cgattacgct ggcaattcct  
caacgaggtg tttttttaag aaatgctgaa ggttccagag tatgtagttt atatgatgaa  
atggctcttt ctggtataat taatgatggg atgcatcacc cactaagcag agagccaata  
acattatcaa tgcttggtgc cagagagcag tgtgagtttg attgcagtat cggtcacttt  
acggtgagga gtgattgtta ttcagtgtag (SEQ ID NO: 71)

**FIG. 26A**Enterohemorrhagic *E. coli* Z2560 Protein Sequence

MDA $\Phi$ IVDPVQGLYSGLSHTELADIIRLADSVENQLNGGNSFLDV $\Phi$ STYMGQVISEFMHSNDNRIELLQ  
RRLHSCSFLVNIEEMSYIDEALQCPITLAI $\Phi$ RGVFLRNAEGSRVCSLYDEMALSRIINDGMHHPLSRE  
PITLSMLVAREQCEFDCSIGHFTVRSDCYSV (SEQ ID NO: 83)

**FIG. 26B**

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Enterohemorrhagic *E. coli* Z2976 Nucleotide Sequence

ATGGCAGACCGCAAACAGCACCGCGCTATCGCGGAGCGTCGTACATCCAGACTGAAATC  
AACCGCAGACTTTCCCGCGCATCACGCGTCGCGCAAATCATGCACATCAATATGCTGCAT  
GAGCGCAGCCACGCACTATCAAACATTTATTCCGCCTCTGTTTTCAGCTATCTGGCGGAT  
GATCTGCACGAGTTTCAACAGCTCATCCAGCAGCAAAACAAACTCCATTAA (SEQ ID NO:72)

**FIG. 27A**Enterohemorrhagic *E. coli* Z2976 Protein Sequence

MADRKQHRAIAERRHIQTEINRRLSRASRVAQIMHINMLHERSHALSNIYSASVFSYLAD  
DLHEFQQLIQQQNKLH (SEQ ID NO:84)

**FIG. 27B**